

Amendment and Response

Applicant: Leif O. Erickson et al.

Serial No.: 10/028,659

Filed: December 21, 2001

Docket No.: 57347US002

Title: METHOD AND APPARATUS FOR APPLYING A SPLICING TAPE TO A ROLL OF SHEET MATERIAL

REMARKS

This Amendment is responsive to the Office Action mailed May 22, 2003. In that Office Action, the Examiner recited a Restriction Requirement relating to claims 1-16 (Group I) and claims 17-18 (Group II) and noted that a provisional election, with possible traverse, was made via telephonic interview on April 3, 2003 to prosecute the claims of Group I. Also in the Office Action, the Examiner rejected claims 1 and 4-6 under 35 U.S.C. §102(b) as being anticipated by Dylla et al., U.S. Patent No. 5,318,656 ("Dylla"). Claims 2-3 and 8-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dylla in view of McCormick et al., U.S. Patent No. 5,524,844 ("McCormick"). Claims 7 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dylla in view of McCormick, and further in view of Wienberg et al., U.S. Patent No. 5,916,651 ("Wienberg"). Finally, the Examiner's indication that claim 16 would be allowed if re-written in independent form is noted with appreciation.

With this Response, claims 1, 4, 17, and 18 have been amended and claims 19 and 20 added. Claims 1-20 remain pending in the application and are presented for reconsideration and allowance.

Restriction Requirement

In response to the Restriction Requirement, election of the invention of Group I is affirmed, without traverse. Claims 17 and 18 have been amended to depend from claim 9 that is otherwise included with Group I.

35 U.S.C. §§102 and 103 Rejections

Claim 1 relates to a method of applying a splicing tape to a roll of sheet material and includes lifting a portion of an outer-most layer away from a remainder of the roll; applying the splicing tape to a wound portion of the roll; and applying pressure to the lifted portion to progressively place the lifted portion in contact with the remainder of the roll and the splicing tape. For the reasons provided below, it is respectfully submitted that Dylla does not teach or suggest at least these limitations, nor do any of the other cited references.

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In particular, Dylla relates to an apparatus for preparing a new roll 4 of web material for flying pasting to an expiring roll 3. In particular, Dylla seeks to simplify the components used to cut, perforate, and apply a holding adhesive and a connecting adhesive to the new roll 4 (Dylla, column 2, lines 9-14). In this regard, the Dylla device 5 includes a base plate 6, and engagement roller 11, a holding adhesive engagement roller 14, and a connecting adhesive application roller 15. With the embodiment of FIG. 2, the engagement roll 11 is positioned to interact with a cutting knife 8 and a perforating blade 9 otherwise provided with the base plate 6. The position of the holding engagement roller 14 corresponds with a groove 13 in the base plate 6 that otherwise retains the holding adhesive 18 (not shown in FIG. 2, but described at column 8, lines 60-62). Finally, the connecting adhesive application roller 15 is positioned and adapted to apply a connecting adhesive 19 (column 6, lines 35-38). With the embodiment of FIG. 9, the holding adhesive engagement roller 14 (unnumbered in FIG. 9) is provided with an application device 20, apart from the connecting adhesive application roller 15.

With all embodiments, during use, an initial portion 41 is rolled off the roll 4 and placed on the base plate 6 (Dylla, column 6, lines 6-8). Dylla is entirely silent as to how the initial portion 41 is placed on the base plate 6. Notably, Dylla specifically does not describe or suggest that the initial portion 41 is “lifted” away from a remainder of the roll 4. Instead, the only teaching is that the initial portion 41 is “rolled” off of the roll 4, meaning that the roll 4 itself is rotated, with a leading end of the initial portion 41 contacting the base plate 6 and moving forwardly along the base plate 6 with further rotation of the roll 4. In fact, relative to the embodiment of FIG. 9, Dylla specifically requires a motor 21, shown as being mounted or connected to the central axis of the roll 4, for “rolling or spooling off the end portion 41.” (column 8, line 67 – column 9, line 2; column 12, lines 25-27).

Once the initial portion 41 is properly positioned on the base plate 6, the initial portion 41 is cut and perforated (column 2, lines 24-28). With respect to the embodiment of FIG. 2, for example, the engagement roller 11 is rolled, in a cross-web fashion, along the initial portion 41, pressing the initial portion 41 against the cutting blade 8 and the perforating blade 9. Continuing with the embodiment of FIG. 2, the initial portion 41 is then retracted along the base plate 6 so as

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to position the cut edge 42 (unnumbered in FIG. 2) adjacent the adhesive-retaining groove 13. The holding adhesive engagement roller 14 and the connecting adhesive application roller 15 are then operated to apply the holding adhesive 18 (via the adhesive-retaining groove 13) on an interior surface of the initial portion 41 and the connecting adhesive 19 on the exterior surface on the initial portion 41, respectively. Alternatively, with the embodiment of FIG. 9, the application device 20 is employed to apply the holding adhesive 18 to the roll 4. However, even with the embodiment of FIG. 9, the connecting adhesive application roller 15 is utilized to apply the connecting adhesive 19 to an exterior surface of the initial portion 41 as otherwise maintained by the base plate 6.

Once the adhesives 18, 19 have been applied, the initial portion 41 is rewound completely on the roll 4 (column 7, lines 1-2). Once again, Dylla specifically requires that the roll 4 itself be rotated to accomplish rewinding of the initial portion 41, such as via the motor 21 of FIG. 9 (column 8, line 67 – column 9, line 2). Alternatively, Dylla references “engagement rollers” that could be employed to ensure that the initial portion 41 is rolled on the roll 4 without air bubbles or entrapped air (column 7, lines 6-11). Regardless, upon completion of this rolling/rewinding operation, the resultant roll 4 is shown in FIG. 4B, with the holding adhesive 18 being covered by the initial portion 41 and otherwise holding the initial portion 41 onto the roll 4. The connecting adhesive 19 is exposed relative to an exterior of the initial portion 41 (as well as the roll 4). Thus, the connecting adhesive 19 is the only adhesive that is available for facilitating subsequent connection to a trailing portion of the depleting roll 3. In other words, the adhesive 18 cannot be a “splicing tape or adhesive” as it is entirely covered by the portion 41 and thus cannot adhere to a separate roll.

In light of the above, Dylla does not teach or suggest several of the limitations of claim 1. For example, Dylla does not teach “lifting a portion of an outer-most layer away from a remainder of the roll”. To the contrary, Dylla at best teaches rotating the roll to extend the initial portion 41. The initial portion 41 is never subjected to a lifting operation.

Additionally, Dylla does not teach or suggest “applying the splicing tape to a wound portion of the roll”. The connecting adhesive 19 is the only component of the Dylla teachings

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that could possibly serve as a “splicing tape” in that it is the only adhesive that is exposed following the adhesive application operation. That is to say, the holding adhesive 18 of Dylla cannot be a “splicing tape”. With this distinct limitation in mind, the connecting adhesive 19 is always applied to the outer surface of the separated initial portion 41 via the connecting adhesive application roller 15 in each and every embodiment of Dylla. Notably, Dylla describes numerous iterations of engagement roller 11, holding adhesive engagement roller 14, and connecting adhesive application roller 15 configurations, none of which teach a method whereby the connecting adhesive 19 (again, analogous to the “splicing tape” of claim 1) is applied to the wound portion of the roll 4 as otherwise recited in claim 1. For these same reasons, Dylla does not teach or suggest applying pressure to the lifted portion to progressively place the lifted portion in contact with the splicing tape. Instead, with the Dylla technique, the connecting adhesive or splicing tape 19 is already applied to the initial portion 41 prior to rewinding of the initial portion 41 back onto the roll 4. As such, even if the language cited by the Examiner (column 7, lines 6-13) is viewed as enabling applying pressure to progressively place the initial portion 41 in contact with the remainder of the roll, it cannot teach progressive placement of the initial portion 41 in contact with the splicing tape, as the connecting adhesive or splicing tape 19 is already in contact with the initial portion 41.

For at least the foregoing reasons, it is respectfully submitted that claim 1 is not taught or otherwise suggested by Dylla.

Claims 2 and 3 were rejected under 35 U.S.C. §103 as being unpatentable over Dylla in view of McCormick. Claims 2 and 3 depend from claim 1. As previously described, claim 1 is not taught or otherwise suggested by Dylla. McCormick does not alter this interpretation. In particular, McCormick includes a web material tensioning apparatus 60 and a web cutting and tape application apparatus 66 that in turn includes a tape application mechanism 72. As shown in FIG. 6 of McCormick, prior to tensioning apparatus 60 engagement of the outer-most layer 150, the cutting/application apparatus 66, including the tape application mechanism 72 is positioned in highly close proximity to the roll 70, with the tape application mechanism 72 virtually in contact with the roll 70. During the web tension steps illustrated in FIGS. 7-9 of

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McCormick, this highly close positioning of the cutting/application apparatus 66 relative to the roll 70 does not change. The outer-most layer 150 is then cut followed by application of a splicing tape. McCormick relies upon vacuum cups 140 to retain the outer-most layer 150, with the cutting/application apparatus 66, including the tape application mechanism 72, being positioned behind the vacuum cups 140 relative to the outer-most layer 150. Clearly, the adhesive tape cannot be “applied” to the leading end until the leading end is actually formed, meaning the tape application cannot occur until after a cut has been made. Because the vacuum cups 140 are positioned downstream of the tape application mechanism 72, as soon as the outer-most layer 150 is cut, tensioning provided by the vacuum cups 140 is lost relative to the cut section such that the newly formed portion of the leading edge immediately falls back to the roll 70. Thus, it is only after the leading edge has fallen back to the roll 70 that the splicing tape is applied. With this technique, then, McCormick clearly does not teach or suggest applying pressure to the lifted portion of the outer-most layer to progressively place the lifted portion in contact with the remainder of the roll, let alone the splicing tape, as otherwise required by claim 1.

In addition, it is respectfully submitted that a requisite suggestion to combine the teachings of Dylla and McCormick does not exist. Dylla is premised upon simplifying the cutting and tape application apparatus (Dylla, column 2, lines 9-11). Implementation of the alleged “lifting” teaching of McCormick is contrary to this specific goal in that complex mechanisms, such as the tension roller assembly 62 and the vacuum retraction assembly 64 that otherwise includes multiple cylinders 110, 124, are required. Further, and as previously described, Dylla is specifically constructed to achieve unwinding and rewinding of the initial portion 41 via rotation of the roll 4, such that Dylla has no need for the complex devices, and related handling techniques, of McCormick.

In light of the above, claim 1 recites allowable subject matter over Dylla and McCormick. Weinberg is even less relevant in that the splice tape of Weinberg does not overcome the deficiencies of Dylla and McCormick. Due to their dependency from claim 1, it is respectfully submitted that claims 2 and 3 are similarly allowable. Additionally, with respect to claim 2, it is

Amendment and Response

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noted that none of the cited references teach or suggest applying pressure to disengage the lifted portion from the sheet engagement mechanism. With the methodology of McCormick, once the outer-most layer is cut, connection with the sheet engagement mechanism (e.g., the vacuum cups 140) is lost such that even if McCormick were combinable with Dylla, and even if Dylla is viewed as teaching “applying pressure to the lifted portion”, this combination does not result in the disengagement of the lifted portion from the sheet engagement mechanism as otherwise required by claim 2. Instead, once cut, the lifted portion is disengaged from the sheet engagement mechanism (per the teachings of McCormick), so that any subsequent pressure application (per the teachings of Dylla) cannot effectuate disengagement from the vacuum cups 140 since the lifted portion is already disengaged. Therefore, claim 2 recites additionally allowable subject matter.

Claims 4-8 depend from claim 1. As previously described, claim 1 is not taught or otherwise suggested by the cited references. Therefore, claims 4-8 are similarly allowable.

Claim 9 relates to an apparatus for applying a splicing tape, and includes a sheet engagement mechanism, a taping device, and a paper applicator. For the reasons previously described with respect to claim 1, it is respectfully submitted that none of the cited references, including Dylla and McCormick, teach or otherwise suggest these limitations. For example, Dylla does not provide a sheet engagement mechanism that lifts an outer-most layer or a taping device that applies a splicing tape to the roll. Further, Dylla’s purported paper applicator cannot progressively place the outer-most layer in contact with the splicing tape because the Dylla configuration applies the splicing tape (or connecting adhesive 19) to the outer-most layer prior to the purported pressure application. Similarly, a requisite suggestion to combine Dylla and McCormick does not exist, and McCormick does not teach or otherwise suggest a paper applicator adapted to apply pressure to the lifted portion. As such, it is respectfully submitted that claim 9 recites allowable subject matter.

Claims 10-18 depend from claim 9. As previously described, claim 9 is not taught or otherwise suggested by the cited references. Thus, claims 10-18 are similarly allowable.

Amendment and Response

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Newly added claim 19 depends from claim 1 and recites that the splicing tape is applied to the wound portion of the roll apart from the lifted portion. Support for this language is found throughout the specification, for example FIG. 11 and related text. Claim 19 depends from claim 1 and thus, for the reasons previously described, is allowable. Further, Dylla is clearly limited to applying the splicing tape (or connecting adhesive 19) directly to the lifted portion. As such, it is respectfully submitted that claim 19 recites allowable subject matter.

Newly presented claim 20 depends from claim 1 and recites that the roll remains stationary during the steps of lifting, applying the splicing tape, and applying pressure to the lifted portion. Support for this language is found, for example, in FIGS. 6A-12B and 15A-15C, and related text. Due to its dependency from claim 1, claim 20 is allowable. Further, Dylla clearly requires rotation of the roll during the cutting and adhesive applying operations. As such, it is respectfully submitted that newly presented claim 20 recites additionally allowable subject matter.

CONCLUSION

It is believed that all claims are now in a condition for allowance. Notice to that effect is respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 500471.

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The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this response.

Respectfully submitted,

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CERTIFICATE UNDER 37 C.F.R. 1.8:

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